# UNITED STATES PATENT AND TRADEMARK OFFICE

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| EXAMINER |
|---|
| RYMAN, DANIEL J |

| ART UNIT | PAPER NUMBER |
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| 2665 | 18 |

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 December 2003 and 22 January 2004*.

2a)☐ This action is **FINAL**.    2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *10-18* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All  b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1.     Applicant's arguments with respect to claims 11 and 16-18 have been considered but are moot in view of the new ground(s) of rejection.

2.     Applicant's arguments filed 12/15/2003 have been fully considered but they are not persuasive. On pages 2-3, Applicant argues that in the present invention "a connection is assigned to a subclass Sx on the basis of its Peak Cell Rate **and** its Sustainable Cell Rate". Examiner, respectfully, points out that claim 10 contains the limitation "modifying at least one of the first and second bandwidths by at least one of a sustainable cell rate and a peak cell rate". Such wording only requires that the modification be performed using the sustainable cell rate *or* the peak cell rate. Since Soumiya explicitly discloses using the peak cell rate, Soumiya renders claim 1 obvious regardless of whether or not Soumiya discloses using SCR.

3.     On page 3 of the Response, Applicant argues that Soumiya does not disclose "effective bandwidth" since Soumiya does not disclose an effective bandwidth comprising a "material constant C" and the "maximum possible load on the line" as defined by the specification. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., material constant C and the maximum possible load on the link) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). If Applicant desires for a term to be defined in a specific manner in the claims, Applicant should

include such a definition in the claims. Otherwise, Examiner will give the term the broadest, reasonable interpretation in view of the prior art.

4.     Further, on pages 3-4 of the Response, Applicant argues that the "Examiner may not conclude, but rather must provide, evidence on the record to support his findings of obviousness". While the Examiner continues to disagree with Applicant on this matter, Examiner has changed the wording of the rejection to state that it is implicit that Soumiya contains an initial value. Since the rejection no longer states the term "obvious", Applicant's arguments are moot.

## Claim Rejections - 35 USC § 103

5.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.     Claims 10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya et al (USPN 5,583,857).

7.     Regarding claim 10, Soumiya discloses a method for statistical multiplexing of ATM connections comprising: conducting a plurality of ATM connections over a common connecting line (col. 5, lines 48-56 and col. 7, lines 12-28), the plurality of ATM connections having an effective bandwidth reserved for conduction of the aggregate of the plurality of ATM connections on the connecting line (col. 17, lines 24-54) and utilizing an acceptance algorithm that allocates potential added connections to one of a first class (Fig. 19: step 202 VBR) and a second class (Fig. 19: step 202 CBR) (col. 17, lines 15-23), and deciding whether an additional

potential added connection can be accepted by the common connecting line based on acceptance

criteria and a prescribed effective bandwidth (col. 7, lines 19-64 and col. 17, lines 15-67), the

deciding step comprising: identifying the prescribed effective bandwidth on a step-by-step basis

with at least one of a setup and a release of connection (col. 17, lines 15-59), wherein the

identification starts from an initial value and the acceptance algorithm is performed at every step

(col. 17, lines 15-59) where it is implicit that there is an initial value such that the process either

begins with a zero effective bandwidth upon initialization if no calls are yet allocated bandwidth

or it is initialized with the bandwidth of any connections the line will carry at initialization;

determining whether at least one of the additional potential added connection or a released

connection may be accepted by at least one of the first class and the second class (col. 7, lines

19-64 and col. 17, lines 15-67); defining a first bandwidth representative of the first class (V) and

a second bandwidth representative of the second class (VX) (col. 17, lines 28-54), modifying at

least one of the first and second bandwidths by at least one of a sustainable cell rate and a peak

cell rate based on the acceptance of the additional potential added connection to at least one of

the first class and the second class (col. 17, lines 15-67 and col. 18, line 17-col. 19, line 43)

where the first and second bandwidths are modified by a peak cell rate; and at least one of

accepting and rejecting the additional potential added connection based on at least the identified

prescribed effective bandwidth and the acceptance criteria (col. 17, lines 54-62 and col. 21, lines

4-29) where at least one of the acceptance criteria is that the total effective bandwidth including

the potential added connection is less than the physical bandwidth. While Soumiya does not

expressly disclose that the estimated bandwidth is equivalent to effective bandwidth, it would

have been obvious to one of ordinary skill in the art at the time of the invention that Soumiya's

estimated bandwidth is equivalent to effective bandwidth (col. 17, lines 24-43) where effective

bandwidth is defined to be the average of the actual bandwidth of the connections.

8.      Regarding claim 12, referring to claim 10, Soumiya discloses that at least one of the

acceptance criteria is established such that, in the case of the connection setup, when the

additional potential added connection can be accepted to the first class (VBR), a calculation is

performed to determine whether the first bandwidth identified is adequate including this

connection, wherein the first bandwidth is not allowed to exceed the sum of the peak cell rates of

all connections (col. 18, lines 51-55 and col. 21, lines 4-29) where VH1 is always less than or

equal to PH1 (peak cell rates) since VH1 is not equal to PH1 only when VH1 is equal to AH1

when AH1 is less than PH1; and the first bandwidth is incremented by the first traffic parameter

value (sustainable cell rate which is equivalent to average cell rate, Ra) (col. 18, lines 17-24 and

col. 18, lines 51-55) when the at least one of the acceptance criteria (estimated peak cell rate is

greater than average cell rate) is met (col. 18, lines 51-55) and the first bandwidth is incremented

by the second traffic parameter value (peak cell rate, Rp) (col. 18, lines 35-43 and col. 18, lines

51-55) when the at least one of the acceptance criteria is not met (col. 18, lines 51-55).

9.      Regarding claim 13, referring to claim 12, Soumiya discloses that when the additional

potential added connection cannot be allocated to the first class (VBR), it is automatically

allocated to the second class (CBR) and the second bandwidth is incremented by the second

traffic parameter value (peak cell rate) (col. 17, lines 15-67).

10.     Regarding claim 14, referring to claim 10, Soumiya discloses that at least one of the

acceptance criteria is established such that, in the case of the connection setup, when the

additional potential added connection can be accepted to the first class (VBR), a calculation is

performed to determine whether the first bandwidth identified is adequate including this

connection, wherein the first bandwidth is not allowed to exceed the sum of the peak cell rates of

all connections (col. 18, lines 51-55 and col. 21, lines 4-29) where VH1 is always less than or

equal to PH1 (peak cell rates) since VH1 is not equal to PH1 only when VH1 is equal to AH1

when AH1 is less than PH1; and the first bandwidth is incremented by the first traffic parameter

value (sustainable cell rate which is equivalent to average cell rate, Ra) (col. 18, lines 17-24 and

col. 18, lines 51-55) when the at least one of the acceptance criteria (estimated peak cell rate is

greater than average cell rate) is met (col. 18, lines 51-55) and the first bandwidth is incremented

by the second traffic parameter value (peak cell rate, Rp) (col. 18, lines 35-43 and col. 18, lines

51-55) when the at least one of the acceptance criteria is not met (col. 18, lines 51-55). Although

it is not expressly stated that at least one of the acceptance criteria is established such that, in the

case of the connection release when the released connection can be accepted by the first class, a

calculation is performed to determine whether the first bandwidth, exclusive of this connection,

is adequate for the remaining connections, wherein the first bandwidth is not allowed to exceed

the sum of the peak cell rates of all connections and the first bandwidth is diminished by the

second traffic parameter value when the at least one of the acceptance criteria is met and the first

bandwidth is diminished by the first traffic parameter value when the at least one of the

acceptance criteria is not met, such a step would have been obvious to one of ordinary skill in the

art at the time of the invention. Soumiya discloses, when a connection is not accepted, adjusting

the values of the estimated bandwidths back to their original values (col. 21, lines 17-21). It is

obvious that such steps are necessary in order to ensure that the total estimated bandwidth

accurately reflects the current total bandwidth of all connections present on the connecting line.

If this process did not take place, the total estimated bandwidth would reflect a greater amount of

bandwidth present on the connecting line than is actually present. In a similar vein, when a

connection is torn-down it would be obvious to decrement the estimated bandwidth using the

same criterion as was used to estimate the bandwidth at establishment such that the total

estimated bandwidth will accurately reflect changes within the line. If such a process did not take

place, such that the bandwidth decremented at tear-down was not equal to the bandwidth

incremented at set-up, total estimated bandwidth would be an inaccurate measurement for the

total bandwidth of the system. It would have been obvious to one of ordinary skill in the art at

the time of the invention to account for released connections by diminishing bandwidth

according to the same criteria as was used to increase bandwidth during start-up in order to

ensure that total bandwidth is accurate.

11.     Regarding claim 15, referring to claim 12, Soumiya discloses that when the additional

potential added connection cannot be allocated to the first class (VBR), it is automatically

allocated to the second class (CBR) and the second bandwidth is incremented by the second

traffic parameter value (peak cell rate) (col. 17, lines 15-67). Although it is not expressly stated

that when the connection to be released cannot be allocated to the first class it is automatically

allocated to the second class and the second bandwidth is diminished by the second traffic

parameter value, such a step would have been obvious to one of ordinary skill in the art at the

time of the invention. Soumiya discloses, when a connection is not accepted, adjusting the values

of the estimated bandwidths back to their original values (col. 17, lines 55-62). It is obvious that

such steps are necessary in order to ensure that the total estimated bandwidth accurately reflects

the current total bandwidth of all connections present on the connecting line. If this process did

not take place, the total estimated bandwidth would reflect a greater amount of bandwidth

present on the connecting line than is actually present. In a similar vein, when a connection is

torn-down it would be obvious to decrement the estimated bandwidth using the same criterion as

was used to estimate the bandwidth at establishment such that the total estimated bandwidth will

accurately reflect changes within the line. If such a process did not take place, such that the

bandwidth decremented at teardown was not equal to the bandwidth incremented at set-up, total

estimated bandwidth would be an inaccurate measurement for the total bandwidth of the system.

It would have been obvious to one of ordinary skill in the art at the time of the invention to

account for released connections by diminishing bandwidth according to the same criteria as was

used to increase bandwidth during start-up in order to ensure that total bandwidth is accurate.

12.     Claims 11 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Soumiya et al (USPN 5,583,857) as applied to claim 10 above, and further in view of Ben-Nun et

al (USPN 5,515,363).

13.     Regarding claim 11, referring to claim 10, Soumiya discloses that the peak cell rate is of

the corresponding connection (col. 17, lines 15-67 and col. 18, line 17-col. 19, line 43). Soumiya

does not expressly discloses that the sustainable cell rate (SCR) is an upper limit for an average

cell rate with which the cells are transmitted during existence of the connection since Soumiya

discloses using an average cell rate rather than a sustainable cell rate. However, Soumiya

discloses that the average cell rate is defined at the start of the connection for variable speed

connections (col. 9, lines 7-44). Ben-Nun discloses, in an ATM system, that the sustainable cell

rate is an upper limit for an average cell rate with which the cells are transmitted during

existence of the connection (col. 4, lines 24-34). Ben-Nun also discloses that the SCR is a

negotiated parameter for variable rate connections (col. 4, line 66-col. 5, line 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to use SCR in place of the average cell rate, where SCR is an upper limit for an average cell rate with which the cells are transmitted during existence of the connection, since SCR is a parameter negotiated for variable rate connections at the start of the connection.

14.     Regarding claim 16, referring to claim 11, Soumiya in view of Ben-Nun discloses that at least one of the acceptance criteria is established such that, in the case of the connection setup, when the additional potential added connection can be accepted to the first class (VBR), a calculation is performed to determine whether the first bandwidth identified is adequate including this connection, wherein the first bandwidth is not allowed to exceed the sum of the peak cell rates of all connections (Soumiya: col. 18, lines 51-55 and col. 21, lines 4-29) where VH1 is always less than or equal to PH1 (peak cell rates) since VH1 is not equal to PH1 only when VH1 is equal to AH1 when AH1 is less than PH1; and the first bandwidth is incremented by the first traffic parameter value (sustainable cell rate which is equivalent to average cell rate, Ra) (Soumiya: col. 18, lines 17-24 and col. 18, lines 51-55) when the at least one of the acceptance criteria (estimated peak cell rate is greater than average cell rate) is met (Soumiya: col. 18, lines 51-55) and the first bandwidth is incremented by the second traffic parameter value (peak cell rate, Rp) (Soumiya: col. 18, lines 35-43 and col. 18, lines 51-55) when the at least one of the acceptance criteria is not met (Soumiya: col. 18, lines 51-55). Although it is not expressly stated that at least one of the acceptance criteria is established such that, in the case of the connection release when the released connection can be accepted by the first class, a calculation is performed to determine whether the first bandwidth, exclusive of this connection, is adequate

for the remaining connections, wherein the first bandwidth is not allowed to exceed the sum of

the peak cell rates of all connections and the first bandwidth is diminished by the second traffic

parameter value when the at least one of the acceptance criteria is met and the first bandwidth is

diminished by the first traffic parameter value when the at least one of the acceptance criteria is

not met, such a step would have been obvious to one of ordinary skill in the art at the time of the

invention. Soumiya in view of Ben-Nun discloses, when a connection is not accepted, adjusting

the values of the estimated bandwidths back to their original values (Soumiya: col. 21, lines 17-

21). It is obvious that such steps are necessary in order to ensure that the total estimated

bandwidth accurately reflects the current total bandwidth of all connections present on the

connecting line. If this process did not take place, the total estimated bandwidth would reflect a

greater amount of bandwidth present on the connecting line than is actually present. In a similar

vein, when a connection is torn-down it would be obvious to decrement the estimated bandwidth

using the same criterion as was used to estimate the bandwidth at establishment such that the

total estimated bandwidth will accurately reflect changes within the line. If such a process did

not take place, such that the bandwidth decremented at tear-down was not equal to the bandwidth

incremented at set-up, total estimated bandwidth would be an inaccurate measurement for the

total bandwidth of the system. It would have been obvious to one of ordinary skill in the art at

the time of the invention to account for released connections by diminishing bandwidth

according to the same criteria as was used to increase bandwidth during start-up in order to

ensure that total bandwidth is accurate.

15.     Regarding claim 17, referring to claim 11, Soumiya in view of Ben-Nun discloses that the

effective bandwidth is derived from the sum of the first and second bandwidth (Soumiya: Fig.

19, step 206'; col. 17, lines 24-62; and col. 21, lines 4-29).

16.     Regarding claim 18, referring to claim 11, Soumiya in view of Ben-Nun suggests that the

acceptance algorithm is started only once per connection to be one of potentially added and

released (Soumiya: Fig. 19: call request admission; col. 17, lines 15-67; and col. 21, lines 4-29).
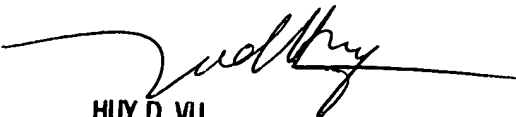
## *Conclusion*

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Daniel J. Ryman whose telephone number is (703)305-6970. The

examiner can normally be reached on Mon.-Fri. 7:00-5:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (703)308-6602. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman
Examiner
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